

Notice of Allowability

Application No.

10/016,549

Examiner

Alexander Jamal

Applicant(s)

LAI ET AL.

Art Unit

2643

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed 7-29-2005.
2. ☒ The allowed claim(s) is/are 1,2,6-9,13,14,16,17,19 and 20.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☒ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☒ Other PTO-413B.


CURTIS KUNTZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

DETAILED ACTION

Response to Amendment

1. Based upon the submitted amendment (7-29-2005), the examiner notes that claims 1,6,8,13,16,17 have been amended and claims 3-5,10-12,15,18 have been cancelled.
2. An examiner's amendment appears below.
3. Examiner withdraws all rejections to all claims.

Examiner's Amendment

4. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview and via email with Thomas J. Onka (reg. number 42053) on 8-30-2005.

The application has been amended as follows:

Claim 17 has been amended as follows.

17. (currently amended) In a modem an echo cancellation method, said modem for establishing communication between a first and a second device via a communication medium, said modem passing a transmit signal generated by the first device via a transmit encoder to the communication medium and passing a receive signal from the communication medium to the first device via a receive decoder, said modem comprising an inverse fast

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Fourier transform circuit for converting said transmit signal from the frequency domain to the time domain and a fast Fourier transform for converting said receive signal from the time domain to the frequency domain, said modem coupled to the communication medium through a hybrid circuit, said echo cancellation method comprising:

~~aligning frames of the transmit signal with frames of the receive signal having echoes corresponding to the transmit signal;~~

generating a cyclic echo signal based on the transmit signal in the time domain using a sub-canceller structure;

adding said cyclic echo signal to the receive signal in the time domain;

~~during a training period, coupling said adding step with said aligning step;~~

during a training period, switchably coupling the result of said adding step to a frame aligner that aligns frames of the transmit signal with frames of the receive signal having echoes corresponding to the transmit signal;

generating an echo cancellation signal based on the transmit signal in the frequency domain and an adaptive signal;

subtracting said echo cancellation signal from the receive signal in the frequency domain; and

generating said adaptive signal based on the receive signal after subtracting said echo cancellation signal.

Allowable Subject Matter

5. **Claims 1,2,6-9,13,14,16,17,19,20** are allowed over the prior art of record.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Jamal whose telephone number is 571-272-7498. The examiner can normally be reached on M-F 9AM-6PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis A Kuntz can be reached on 571-272-7499. The fax phone numbers for the

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organization where this application or proceeding is assigned are **571-273-8300** for regular communications and **571-273-8300** for After Final communications.

AJ

August 30, 2005


CURTIS KUNTZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600